

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 4/30/13 at 9:00 a.m.

Objective: Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will work with other technical teams. DOSS notes and advice can be found at: <http://www.swr.noaa.gov/ocap/doss.htm>.

DWR: Mike Ford, James Gleim, Andy Chu, Edmund Yu, Kevin Reece, Dan Yamanaka

FWS: Leigh Bartoo, Craig Anderson, Roger Guinee

NMFS: Barbara Rocco, Garwin Yip, Jeff Stuart, Barb Byrne

Reclamation: Russ Yaworsky, Josh Israel

DFW: Krystal Acierto, Robert Vincik, Bob Fujimura

EPA: Erin Foresman

SWRCB, USGS: not present

Agenda

1. Fish monitoring
2. Current operations
3. DOSS annual report—initial brainstorm of topics that should be written up for the 2013 report.

Fish Monitoring: The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also:

<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

Location	Chippis Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	Tisdale RST	Beach Seines
Sample Date	4/22, 24, 26	4/22, 24, 26	4/23–4/28	4/23, 24, 25, 29	4/22, 23, 25, 26
Total Catch	519	240	466	4	33
FR	186	180	463	3	8
WR					
SR	173	22			1
LFR					
Ad-Clipped Chinook	150	38		1	1+1 pkLC
DS	1 (77 mm; no expression)				
Splittail	6 (216–270 mm; no expression)				22
Longfin	2 (85 & 117 mm)				
SH (ad-clip)					
SH (wild)	1 (249)		3		
W. Temp. (avg. °F)	62.8	65.8		63.0	64.9

Flows (avg. cfs)				5090	
Turbidity (avg. NTU)	45.3	10.5		17.0	60.6
WR/LFR Avg. CPUE					
FR/SR Avg. CPUE				0.027	

Key: FR = Fall run; LFR = Late-fall run; SR = Spring run; WR = Winter run; SH = Steelhead; DS = Delta smelt; LFS = Longfin smelt; CPUE = catch per unit of effort; ACT = acoustic tag; N/A = not available; pkLC = pink (pk) paint or spray dye mark on the lower caudal (LC) fin

Mossdale: On 4/26, 5,000 Chinook marked with purple dye on the dorsal fin were released for the Mossdale trawl efficiency test. A juvenile Chinook with suture, and five juvenile Chinook with antennae were caught during the reporting period. (*Note from Byrne [NMFS]: radio-tagged fish were likely from Stanislaus study*). The seasonal (4/2-4/27) catch of Chinook salmon is 2,795.

Other Releases/Monitoring:

- The San Joaquin Restoration Program recently released Chinook into the San Joaquin River.
- A FWS-funded study is currently radio tagging and releasing fish into the Stanislaus River
- Releases for the 6-year steelhead acoustic tag study are scheduled for 5/8 and 5/9. If anyone is interested in observing the tagging and release activities, please contact Israel (Reclamation) and he will provide specifics on where to meet, what to bring, etc.

Fish Salvage: Geir Aasen (DFW) provided the fish salvage report covering 4/22/13 through 4/28/13 and emailed it to DOSS participants. This report is posted at <ftp://ftp.delta.dfg.ca.gov/salvage> and you can locate the table under folder “DOSS salvage tables” (also try <http://www.dfg.ca.gov/delta/apps/salvage/Default.aspx> and click on “salvage FTP site”).

Fujimura’s (DFW) report on salvage for 4/22–4/28/13

The number of salvaged steelhead last week was comparable to that of the previous week, but the proportion of hatchery steelhead to non-ad-clipped steelhead increased.

There were 44 non-ad-clipped steelhead salvaged during the reporting period. The estimated daily loss densities ranged from 0.76 to 10.73 fish/TAF and exceeded the first-stage loss criterion (8 fish/TAF multiplied by volume exported, in TAF) 1 out of 7 days. As of 4/28, the season total of salvaged non-ad-clipped steelhead is 611. Nine hatchery steelhead were also salvaged during the reporting period.

No non-ad-clipped older juvenile or ad-clipped juvenile Chinook salmon were salvaged last week. Salvage of non-ad-clipped juvenile Chinook increased for both spring-run- and fall-run-sized fish, with 1,037 non-clipped juvenile Chinook salvaged, of which 138 were spring-run size and 899 were fall-run size.

No sturgeon were observed last week.

Fujimura’s report on preliminary salvage estimates for 4/29: On 4/29, 12 steelhead, 4 spring-run-sized Chinook, and 56 fall-run-size Chinook were salvaged at the CVP. These were most likely non-ad-clipped but this has not yet been confirmed. At the SWP, 4 non-ad-clipped

steelhead, 2 spring-run ad-clipped Chinook, 28 spring-run non-ad-clipped juvenile Chinook, and 60 fall-run-size non-ad-clipped Chinook were salvaged. Final salvage numbers may differ from these preliminary estimates.

RPA Action IV.2.3: A first-stage action trigger was exceeded on Thursday, 4/25, according to the steelhead loss criterion. The associated action response calls for OMR to be no more negative than -3,500 cfs for at least 5 days. Day 1 of the action response was Friday, 4/26; day 5 is today, 4/30. The daily non-ad-clipped steelhead loss on 4/28, and preliminary daily non-ad-clipped steelhead loss on 4/29, were below the first-stage trigger level. We won't know until tomorrow, 5/1 (when the official loss estimate for 4/30 is expected to be reported), whether the final 3 days of the action response (4/28, 4/29, and 4/30) show losses below the first- and second-stage loss criteria.

Compiled by Bob Fujimura on April 29, 2013

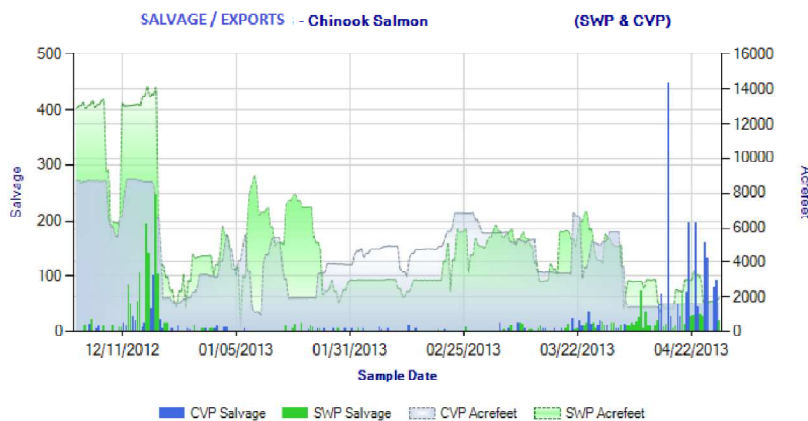


Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during December 1, 2012 through April 28, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

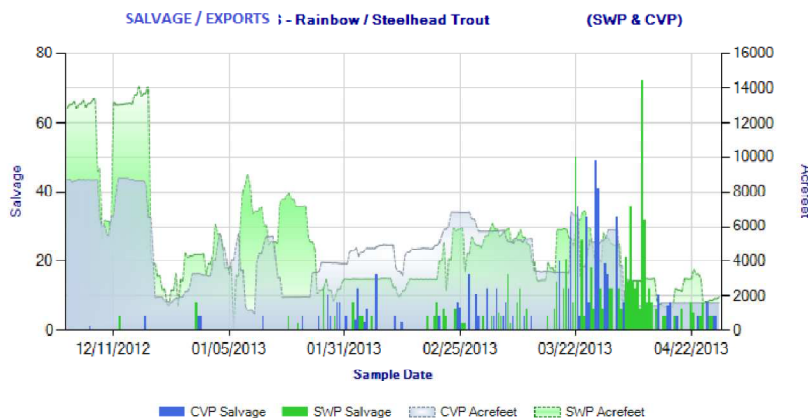


Figure 2. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during December 1, 2012 through April 28, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

DOSS Weekly Salvage Update
Reporting Period: April 22-28, 2013
Prepared by Bob Fujimura on April 28, 2013 21:00
Preliminary Results - Subject to Revision

Criteria	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Trend	
Loss Densities									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0.0
Wild steelhead	3.77	3.37	3.75	10.73	6.71	5.94	0.76	↗	5.0
Exports									
SWP daily export	2,884	3,529	2,984	1,607	1,775	1,759	1,954	↗	2,370
CVP daily export	1,607	1,613	1,629	1,621	1,616	1,614	1,616	↗	1,617

Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; wild = adposse fin present
Loss = estimated number of fish lost at the CVP and SWP Delta export facilities based on estimated salvage (see below)

Chinook Salmon Weekly/Season Salvage and Loss

Combined salvage and loss for both CVP and SWP fish facilities
Race determined by size at date of capture; hatchery = adposse fin missing;

Category	Weekly Total			Season Total	
	Salvage	Loss	Trend	Salvage	Loss
Wild					
Winter Run	0	0	→	271	731
Spring Run	138	298	→	521	1,501
Late Fall Run	0	0	→	85	277
Fall Run	899	1,049	↗	1,443	2,149
Unclassified	0	0	→	8	5
Total	1,037	1,347		2,328	4,663
Hatchery					
Winter Run	0	0	↘	187	595
Spring Run	0	0	→	0	0
Late Fall Run	0	0	→	781	2,898
Fall Run	0	0	→	415	1,522
Unclassified	0	0	→	0	0
Total	0	0		1,383	5,015

Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time

Steelhead Weekly/Season Salvage and Loss

Combined salvage and loss for both CVP and SWP fish facilities

Category	Weekly Total			Season Total	
	Salvage	Loss	Trend	Salvage	Loss
Wild	44	132	↘	611	1,717
Hatchery	9	24	→	645	1,654
Total	53	156		1,256	3,371

State Water Project loss = salvage x 4.33; Central Valley Project loss = salvage x 0.88

Hatchery Coded-Wire-Tag (CWT) Results (as of 4/28/13, see table below): There were no additional losses from 4/22 through 4/28. There is still one tag to be read from 4/29 but it is from a spring-run size fish and is expected to have no effect on the triggers. There have been no fish seen from the Coleman National Fish Hatchery fall-run releases.

CONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Release Date	CWT Race	Hatchery	Release Site	Release Type	Confirmed Loss	Number Released ¹	Total Entering Delta	% Loss of Number Released ²	% Loss of Total Entering Delta ³	First Concern Level	Second Concern Level	Date of First Loss	Date of Last Loss
11/5/2012	F	Mokelumne River Hatchery	Mokelumne River	**	599.45	100,633	n/a	0.596	n/a	n/a	n/a	12/5/2012	4/8/2013
11/20/2012	LF	Coleman NFH	Battle Creek	Production	4100.48	805,842	n/a	0.509	n/a	n/a	n/a	12/9/2012	4/21/2013
12/18/2012	LF	Coleman NFH	Battle Creek	Spring Surrogate	74.95	72,974	n/a	0.103	n/a	0.5%	1.0%	12/31/2012	3/23/2013
1/8/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	138.70	79,000	n/a	0.176	n/a	0.5%	1.0%	1/20/2013	3/27/2013
1/25/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	24.40	85,600	n/a	0.029	n/a	0.5%	1.0%	2/3/2013	3/31/2013
2/7/2013	W	Livingston Stone NFH	Caldwell Park	Production	8.59	182,862	80,525	0.005	0.009	0.5%	1.0%	3/25/2013	3/25/2013

UNCONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Facility	Unknown CWT Loss ⁴	Unread CWT Loss ⁵	Unknown Hatchery Loss ⁶	Acoustic Tag Loss ⁷	Number of Unassigned CWTs ⁸
SWP	45.16	0.00	0.00	17.93	1
CVP	5.20	0.00	0.00	0.00	0
TOTAL	50.36	0.00	0.00	17.93	1

SWP and CVP adipose fin clipped Chinook lost from 10/1/2012 through 4/28/2013.

¹Number released with the adipose fin clipped and a CWT.

²% Loss of Number Released = (Confirmed Loss/Number Released)*100.

³% Loss of Total Entering Delta = (Confirmed Loss/Total Entering Delta)*100.

⁴Adipose fin clipped Chinook was observed during fish count, but tag code could not be determined (e.g., damaged tag, lost tag, no tag, or Chinook accidentally released).

⁵Adipose fin clipped Chinook was collected during fish count and has not been processed yet.

⁶CWT has been read, but hatchery release information not yet available.

⁷Adipose fin clipped Chinook released due to presence of sutures.

⁸CWT cannot currently be assigned to a salvage record with certainty since the CWT was lost and then found. CWT may be assigned to a salvage record if new information is available.

** Information not yet available.

DWR-DES Revised 4/29/2013

Preliminary data from DFW, DWR, FWS, and Reclamation; subject to revision.

Operations (4/30/13)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	3,000 (up from 2,500 on 4/29; targeting 4,000 combined for 5/1)	Jones Pumping Plant	800 (until 3-day efficiency study begins on 5/2*; expected to be at approximately 2,000 cfs on 5/5 after study ends).
Reservoir Releases (cfs)			
Feather - Oroville	4,900 (went from 1,300 on 4/22 to 2,500 on 4/23 and up to 5,250 on 4/26; will go down to 4,500 today because of temperature concerns)	American - Nimbus	1,100 (was 1,250 on 4/27–4/28 and decreasing to 1,000 on 5/1)
		Sacramento - Keswick	11,000 (no change anticipated in near future)
		Stanislaus - Goodwin	3,000
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	439 (41)	San Luis (CVP)	679 (70)
Oroville	3,053 (86)	Shasta	3,803 (84)
New Melones	1,465 (61)	Folsom	679 (70)
Delta Operations			
DCC	Closed	Sacramento River at	11,268

		Freeport (cfs)	
Outflow Index (cfs)	10,800 (up from 6,000 on 1 day last week)	San Joaquin River (cfs) at Vernalis	4,130
Total Delta Inflow (cfs)	16,723	OMR (daily) (cfs)	+3,000 (this is questionable and DWR is confirming gage data with USGS)
Water Temperature (°F)	69.1 (20.6°C; at CCF)	OMR 5-day avg (cfs)	-157
X2 (km)	>81 (upstream of Collinsville)	OMR 14-day avg (cfs)	-447
E/I (%)	18.5 (3-d avg)		

* Jones Pumping Plant will be operated at five units on 5/2 (~4,200 cfs), three units on 5/3 (~2,600 cfs) and one unit on 5/4 (~800 cfs).

Since 4/25, a combination of Delta outflow and the Emmaton water quality standard under SWRCB D-1641 have been controlling operations, both in terms of exports and reservoir releases. The Emmaton standard was actually exceeded for a few days (EC 14-d average exceeded beginning 4/28). DWR hopes to get the daily EC below 0.45 mS/cm within a few days. Flows on the Sacramento River were affected by a big change in accretions/depletions; 2 weeks ago, the Sacramento River showed accretions of 2–3,000 cfs; currently, flows are being affected by an estimated 5,000 cfs of depletion. The Delta is in “balanced condition” as of 4/25.

DOSS Annual Report—Suggested Topics: Per the BiOp, DOSS shall provide an annual report each year “to Reclamation, DWR, and NMFS”. It was noted that although the DOSS annual report has been provided each year to the Independent Review Panel as part of the annual review process, inclusion of the DOSS annual report as material for the annual review is not an explicit requirement of the BiOp. It was suggested that the Implementation Management Team (IMT, formed to oversee and implement the RPA) be offered an opportunity to review an outline (probably in the form of a draft table of contents [TOC]) of the 2013 DOSS annual report. The June IMT meeting will be held on 6/12; a draft DOSS TOC will be provided by that time.

Byrne (NMFS) will draft a TOC to send out to DOSS for review; the latest draft TOC will be shared with IMT for discussion at its 6/12 meeting.

Suggested topics are:

- Clarification of Action IV.3 language (Byrne will draft)
- Rounding discussion on steelhead loss trigger (Yu will draft)
- Calculation of the 14-day I:E ratio when the health and safety exception is implemented during the 14 days (Byrne will draft)
- Terms & Conditions 2a: Alternate form of the loss equation (Israel, Reclamation, & Yu will jointly draft)
- Tisdale Rotary Screw Trap (RST) location (Byrne and Rocco [NMFS] will draft)
- Knights Landing RST location, including shutdown, new protocols, and consideration of consequences of gap in sampling. (Byrne, Vincik [DFW], and Israel will draft)
- Summary of Mill & Deer creek report from DFW and DOSS recommendations (Byrne will ask Oppenheim to draft)
- Tracy Fish Facility (Tracy) study: although Israel will email the study plan to DOSS, the group agreed that the DOSS annual report will acknowledge coordination among DOSS,

WOMT, and Tracy but not include the study plan (Israel will draft; Yaworsky [Reclamation] will review operational summary)

Any additional suggestions for topics should be sent to Byrne.

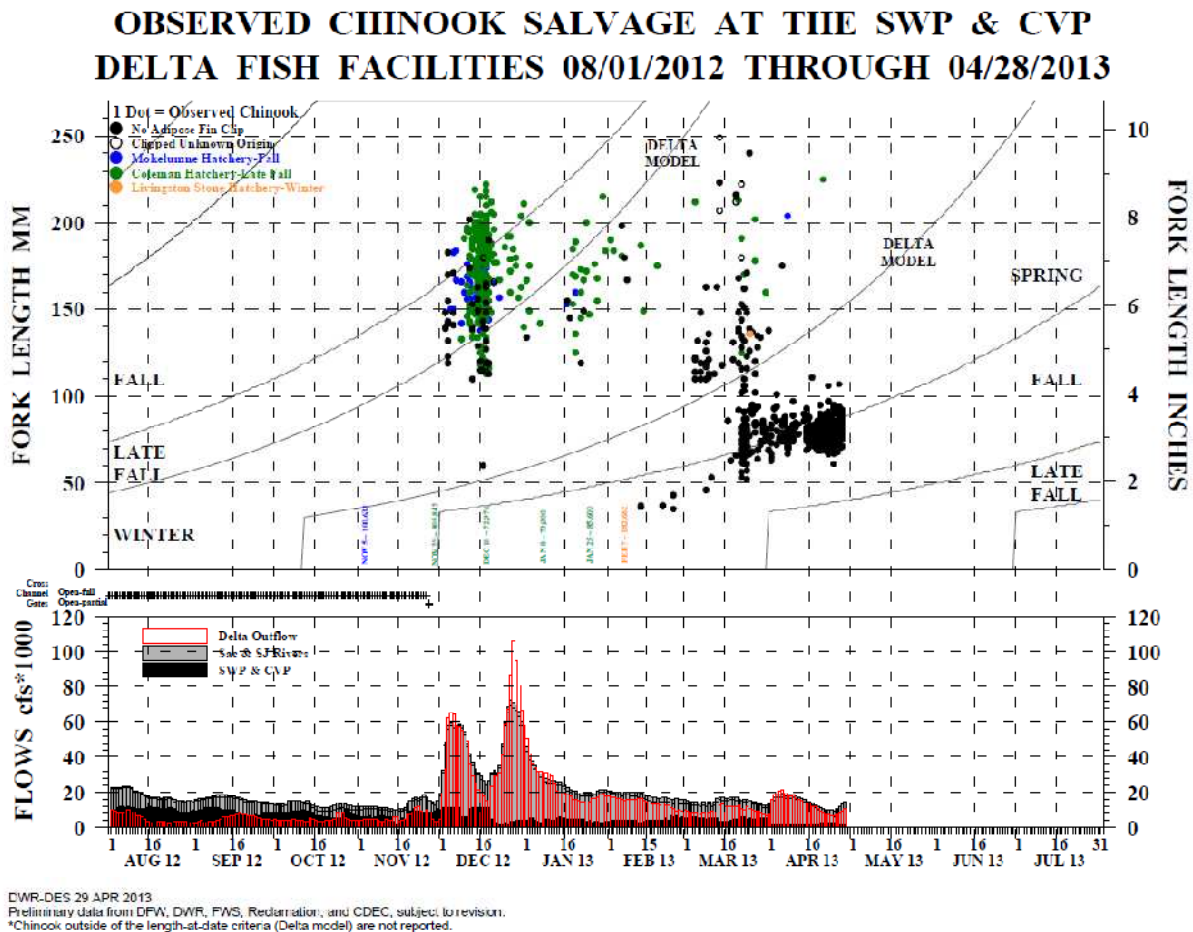
Smelt Working Group (SWG): The current operations continue to provide adequate protection for both delta and longfin smelt; however, should OMR reach -2,500 to -3,000 cfs, SWG would meet again to determine whether more protective operations are necessary.

DOSS Advice to WOMT and NMFS: None.

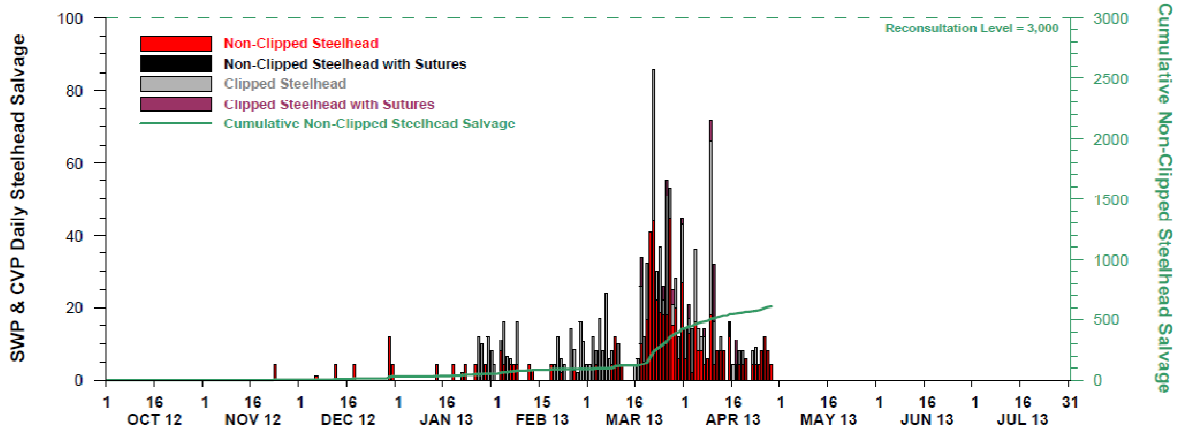
Next Meeting: The next DOSS conference call is scheduled for 5/7/13, at 9:00 a.m.

Below are graphs provided by DWR for Chinook salmon and steelhead salvaged or lost at the Delta fish facilities and observed in the Sacramento and San Joaquin rivers. For additional graphs, please visit the DWR website

at: <http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

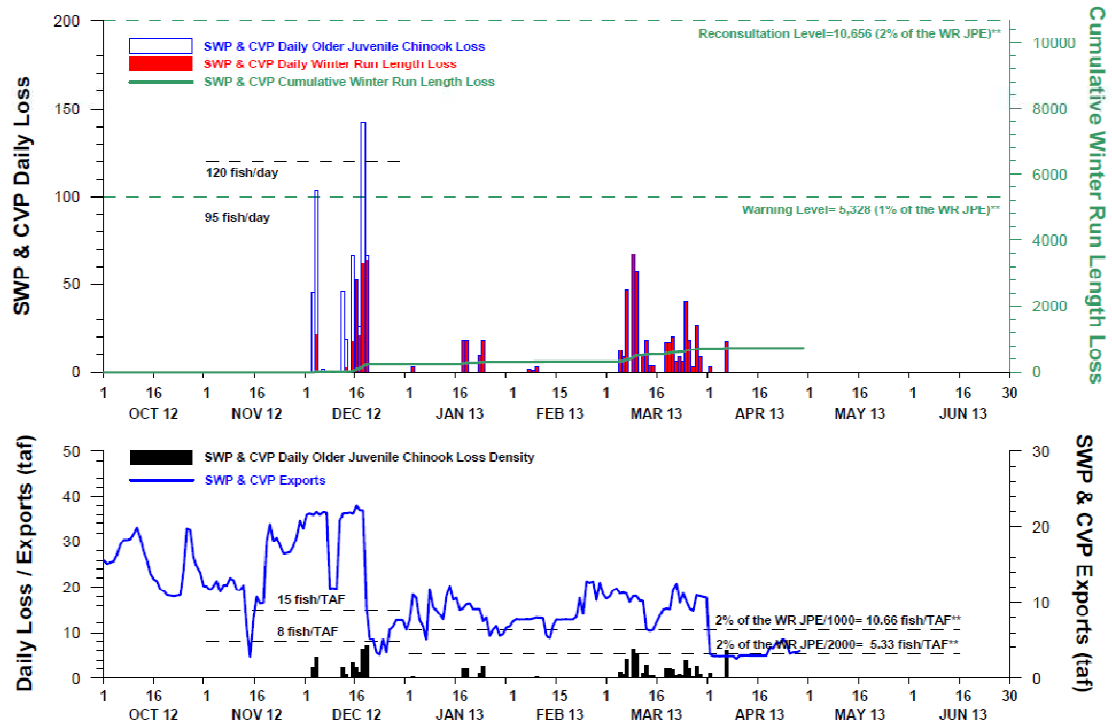


STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 28 APR 2013



DWR-DES 29 APR 2013
Preliminary data from DFW; subject to revision.

NON-CLIPPED WINTER RUN & OLDER JUVENILE CHINOOK LOSS AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 28 APR 2013



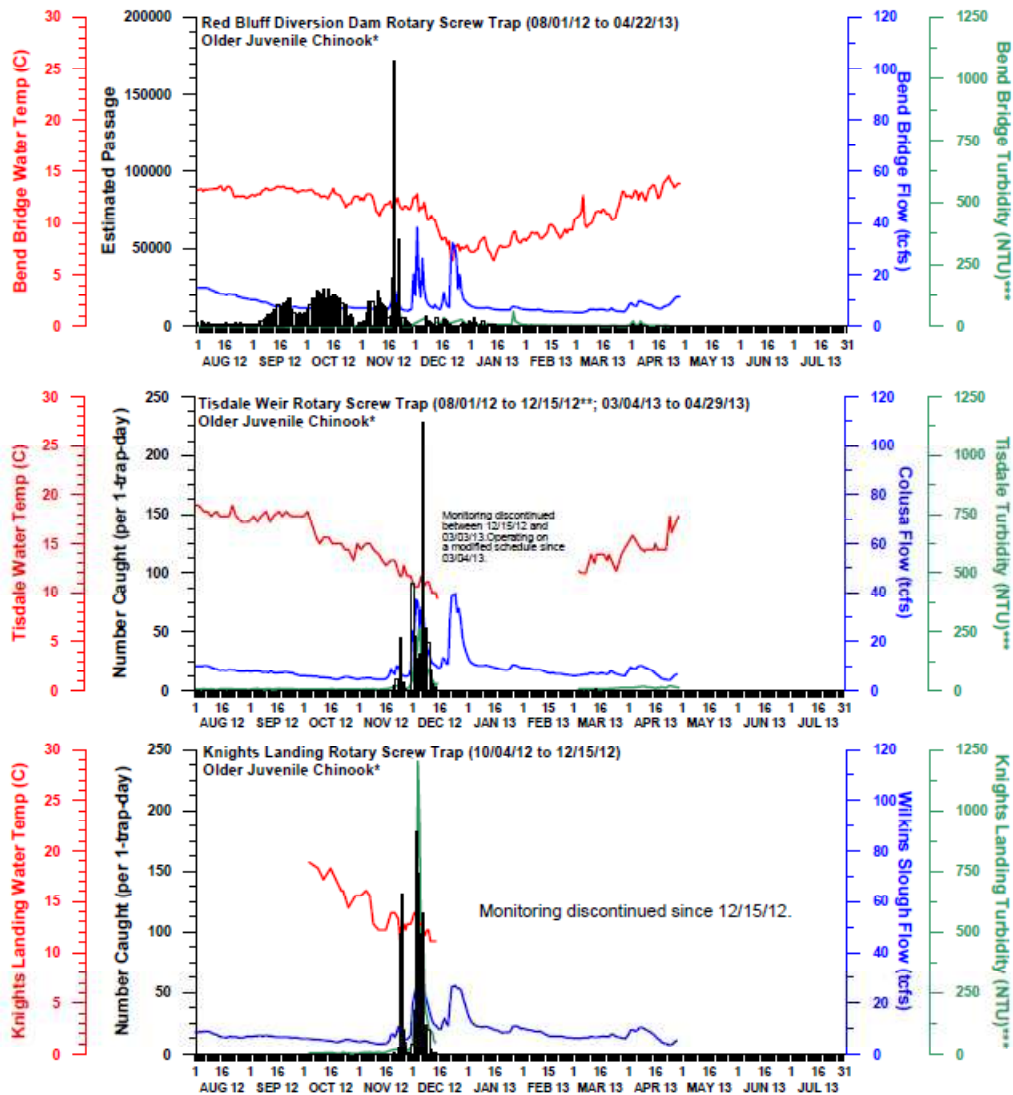
DWR-DES 29 APR 2013

Preliminary data from DFW; subject to revision.

**Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Delta model).

**Based on the final juvenile production estimate (JPE), which comes out to be about 532,809 non-clipped winter run (WR) Chinook entering the Delta during water year 2013.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 29 APR 2013

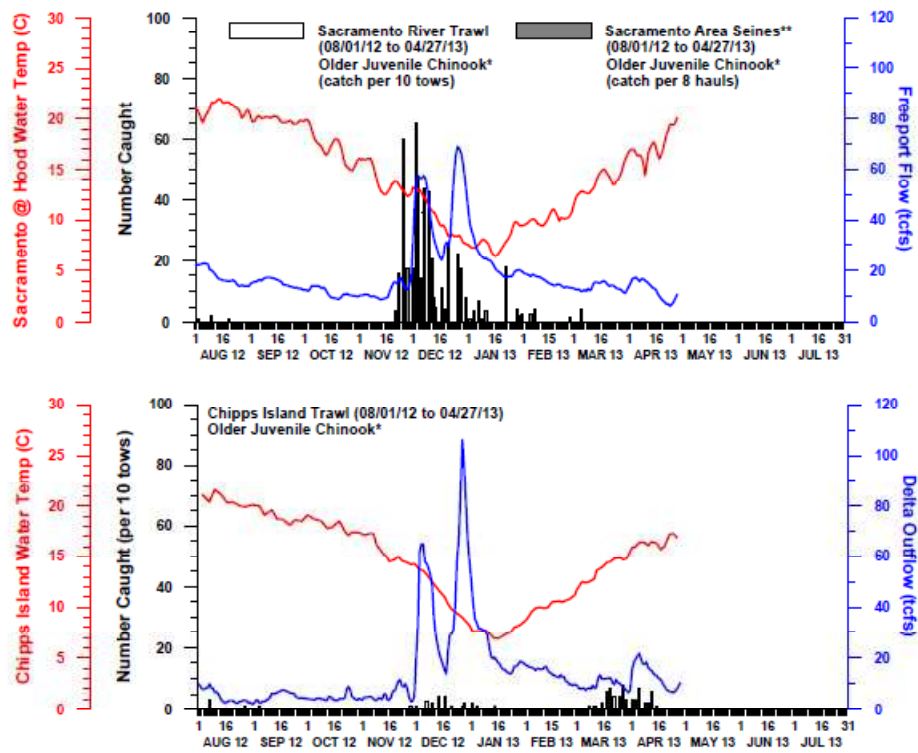
Preliminary data from DFW, FWS, and CDEC; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

** Tisdale Weir: One older juvenile caught on 9/14 and 43 older juveniles caught on 11/25. However, CPUE was not calculated due to problems with the cone clickers. As a result, data are not presented on the graph.

***Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER & CHIPPS ISLAND



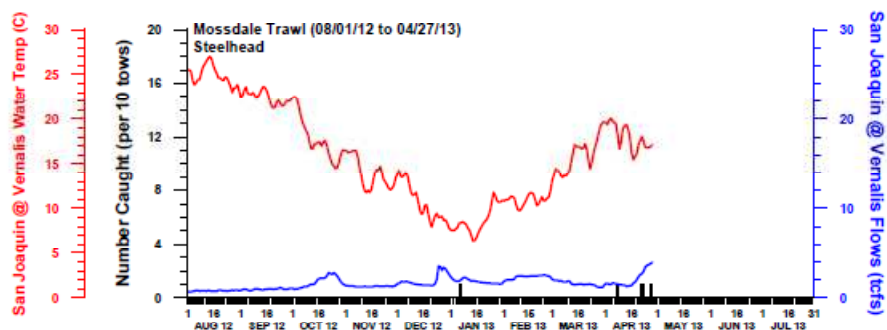
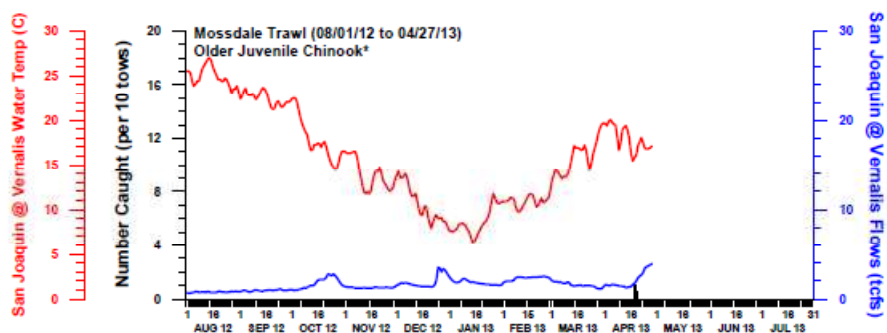
DWR-DES 29 APR 2013

Preliminary data from FWS and CDEC; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

**Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND UNMARKED STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 29 APR 2013

Preliminary data from DFW, FWS, and CDEC; subject to revision.

*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).